

In the Abstract

An abstract is provided on a separate paper as Attachment A to this response.

In the Claims

Please amend the claims as follows. Attached hereto is a marked-up version of the amended claims showing the changes, entitled "Version With Markings To Show Changes Made." *esp. 5192; also filed 12/2, 2000; also filed 12/2, 2000*

Claim 1. (Amended) A process for preparing an organically modified aerogel, which comprises

- B2*
esp. 5192; also filed 12/2, 2000; also filed 12/2, 2000
- a) introducing a hydrogel formed at pH greater than 3 as initial charge,
 - b) modifying the surface of the hydrogel obtained in step a) by mixing the hydrogel with hydrophobing agent to form a hydrophobic surface modified gel, and
 - c) drying the surface-modified gel obtained in step b).

Claim 3. (Twice Amended) A process for preparing an organically modified aerogel, which comprises:

- B3*
- a) forming a silicatic hydrogel at $\text{pH} \geq 3$;
 - b) subjecting the silicatic hydrogel formed in step a), optionally after intermediate treatment steps, to surface modification by mixing the hydrogel with hydrophobing agent to form a surface modified gel; and
 - c) drying the surface modified gel obtained in step b), optionally after additional treatment steps,

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B³ wherein the silicatic hydrogel is prepared by bringing an aqueous waterglass solution to a pH \leq 3 with the aid of an acidic ion exchanger resin or a mineral acid, and polycondensing the resulting silicic acid by addition of a base to form an SiO₂ gel.

Claim 5. (Twice Amended) A process for preparing an organically modified aerogel, which comprises:

- B⁴
- a) forming a silicatic hydrogel at pH \geq 3;
 - b) subjecting the silicatic hydrogel formed in step a), optionally after intermediate treatment steps, to surface modification by mixing the hydrogel with hydrophobing agent to form a surface modified gel; and
 - c) drying the surface modified gel obtained in step b), optionally after additional treatment steps;

→ wherein the silicatic hydrogel is obtained by hydrolysis and polycondensation of silicon tetrachloride.

B⁵ Claim 22. (Twice Amended) The process as claimed in claim 1, wherein the agent for surface modification is generated shortly before and/or during the surface modification.

B⁶ Claim 28. (Amended) A process for preparing an organically modified aerogel, which comprises:

- a) introducing a hydrogel as initial charge,
- b) modifying the surface of the hydrogel obtained in step a) to form a surface modified gel, and
- c) drying the surface-modified gel obtained in step b),

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wherein an outer surface of the hydrogel is dried by means of at least one gas prior to surface modification.

Claim 29. (Amended) A process for preparing an organically modified aerogel, which comprises:

- a) introducing a hydrogel as initial charge,
- b) modifying the surface of the hydrogel obtained in step a) to form a surface modified gel, and
- c) drying the surface-modified gel obtained in step b),

wherein an outer surface of the hydrogel is dried by means of HCl gas prior to surface modification.

Claim 30. (Amended) A process for preparing an organically modified aerogel, which comprises:

- a) introducing a hydrogel as initial charge,
- b) modifying the surface of the hydrogel obtained in step a) to form a surface modified gel, and
- c) drying the surface-modified gel obtained in step b),

wherein an outer surface of the hydrogel is dried by means of HMDSO prior to surface modification.

Claim 34. (Twice Amended) The process as claimed in at least one of claims 2 to 33, wherein the gel obtained in step a) is reacted, prior to silylation, with a solution of a condensable orthosilicate of the formula $R^1_{4-n}Si(OR^2)_n$, where $n = 2$ to 4 and R^1 and R^2 independently of one

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B⁷
another are hydrogen atoms or linear or branched C₁-C₆-alkyl, cyclohexyl or phenyl radicals, or with an aqueous silicic acid solution.

Claim 36. (Amended) The process as claimed in claim 35, wherein the additives comprise ionic compounds.

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Claim 37. (Amended) The process as claimed in claim 35 or 36, wherein the additives comprise opacifiers.

Claim 38. (Amended) An aerogel produced by the process of claim 1, which is free from Si-OR groups.

Claim 49. (Amended) A process for producing an organically modified lyogel, which comprises

- B⁹
- a) introducing a hydrogel formed at pH greater than 3 as initial charge, and
 - b) subjecting the hydrogel obtained in step (a) to surface modification by mixing the hydrogel with hydrophobing agent to form a surface modified gel.

Claim 50. (Amended) An aerogel produced by the process of claim 49, which is free from Si-OR groups.

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Claim 54. (Amended) A process for producing an organically modified lyogel, which comprises:

- a) forming a hydrogel at pH > 3;

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b) surface modifying the hydrogel formed in step a), optionally after intermediate treatment steps, by mixing the hydrogel with hydrophobing agent to form a hydrophobic surface modified gel; and

c) optionally after additional treatment steps, drying the surface modified gel obtained in step b).

Claim 55. (Amended) The process according to claim 54, wherein the hydrogel is formed in step a) at pH between pH 3 and pH 8.

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Claim 56 (Amended) The process according to claim 54 or 55, wherein the hydrogel is formed in step a) by lowering the pH of an aqueous waterglass solution.

Claim 57. (Amended) The process according to claim 55, wherein the pH of an aqueous waterglass solution is lowered in step a) to a pH value not less than 3.

Claim 58. (Amended) The process according to claim 57 wherein a) a hydrogel is formed by lowering the pH of an aqueous waterglass solution by addition of acid to $\text{pH} \geq 8$ and establishing the pH between pH 3 and pH 8; b) the hydrogel formed in step a) optionally after intermediate treatment steps, is subjected to surface modification by mixing the hydrogel with hydrophobing agent to form a surface modified gel; and c) the surface modified gel obtained in step b), optionally after additional treatment steps, is dried.

Claim 59. (Amended) The process according to claim 54 or 55, wherein the hydrogel is formed in step a) by addition of acid to aqueous waterglass solution and without subsequent addition of base in step a).

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Claim 60. (Amended) The process according to claim 54 or 55, wherein step a) and b) are carried out as a semi-continuous process.

Claim 61. (Amended) The process according to claim 54 or 55, wherein steps a) and b) are carried out as a continuous process.

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Claim 62. (Amended) A process for producing an organically modified aerogel, which comprises:

- a) forming a hydrogel at $\text{pH} > 3$;
 - b) surface modifying the hydrogel formed in step a), optionally after intermediate treatment steps, by mixing the hydrogel with hydrophobing agent to form a surface modified gel; and
 - c) optionally after additional treatment steps, drying the surface modified gel obtained in step b);
- wherein steps a) and b) are carried out as a semi-continuous process, wherein a continuous or semi-continuous stream of acid is mixed with a continuous or semi-continuous stream of aqueous waterglass solution.

Claim 63. (Amended) The process according to claim 62, wherein the acid stream is admixed with the aqueous waterglass solution through a mixing nozzle.

Claim 64. (Amended) The process according to claim 54, wherein step b) results in a hydrophobic gel in a liquid phase substantially immiscible with water, which liquid is separated from an aqueous phase formed by the water from the hydrogel.

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Claim 65. (Amended) A process for preparing an organically modified aerogel, which comprises:

- B¹⁰
- a) introducing a hydrogel as initial charge,
 - b) modifying the surface of the hydrogel obtained in step (a), and
 - c) drying the surface-modified gel obtained in step (b),

wherein the hydrogel obtained in step b) is subjected to surface silylation using a silylating agent comprising at least one silane of the formula $R^1_{4-n}SiCl_n$ or $R^1_{4-n}Si(OR^2)_n$ where $n = 1$ to 4 and where R^1 and R^2 independently of one another are identical or different and are each a hydrogen atom or a nonreactive, organic, linear, branched, cyclic, saturated or unsaturated, aromatic or heteroaromatic radical, wherein the silylating agent comprises at least TMCS and the liquid phase comprises at least HMDSO.

Claim 66. (Amended) The process according to claim 65 wherein at least a portion of the HMDSO is subsequently recycled.

Please add the following new claims 67-75.

Claim 67. (NEW) The process for producing an organically modified aerogels according to claim 62, wherein the hydrogel is formed in step a) at pH between pH 3 and pH 8.

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Claim 68. (NEW) A process for producing an organically modified aerogels, wherein:

- a) a hydrogel is formed at $pH \geq 3$;
- b) the hydrogel formed in step a), optionally after intermediate treatment steps, is subjected to surface modification by mixing the hydrogel with hydrophobing agent to form a surface modified gel; and

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c) the surface modified gel obtained in step b), optionally after additional treatment steps, is dried;
wherein step a) and b) are carried out as a continuous process and a continuous or semi-continuous stream of acid is mixed with a continuous or semi-continuous stream of aqueous waterglass solution.

Claim 69. (NEW) The process according to claim 68, wherein the hydrogel is formed in step a) at pH between pH 3 and pH 8.

Claim 70. (NEW) The process according to claim 65, wherein the silylating agent is used in liquid form or as a gas or vapor.

Claim 71. (NEW) The process of claim 3 further comprising washing the gel with water to free it from any electrolyte.

Claim 72. (NEW) The process of claim 22, wherein the agent for surface modification is generated shortly before or during the surface modification by means of an acid.

Claim 73. (NEW) The process of claim 34, wherein the gel obtained in step a) is reacted, prior to silylation, with a solution of an alkyl or aryl orthosilicate.

Claim 74. (NEW) The process of claim 36, wherein the additives used comprise NaCl.

Claim 75. (NEW) The process as claimed in claim 37, wherein the additives used as opacifiers comprise IR opacifiers.

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